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REPORT OF THE MISSION DISPATCHED BY THE SECRETARY-GENERAL TO INVESTIGATE AN ALLEGED USE OF CHEMICAL WEAPONS IN MOZAMBIQUE

Note by the Secretary-General

1. In a letter dated 27 January 1992 the Permanent Representative of Mozambique informed the Secretary-General that, following military operations by Mozambican government forces against forces opposed to the Government, on 16 January 1992 the government forces had been subject to an attack in which a chemical weapon was alleged to have been used. The Permanent Representative, on behalf of his Government, requested that a United Nations team of experts be dispatched to Mozambique to investigate the incident.

2. After having requested further information and clarifications from the Government of Mozambique and having been informed of the preliminary results of an investigation carried out on the request of the Government of Mozambique by experts from the National Defence Research Establishment of Sweden from 5 to 11 February 1992, the Secretary-General reached the conclusion that an investigation in Mozambique was warranted, although the passage of a considerable amount of time since the date of the incident was feared to have substantially diminished the possibility of determining what chemical agents, if any, might have been involved.

3. Accordingly, the Secretary-General, under his own authority, decided to appoint a mission of three qualified experts, with the assistance of two United Nations officers, for this investigation. The President of the Security Council was informed of the decision in a letter from the Secretary-General dated 26 March 1992. Following contacts with various experts and research institutions, whose willingness to assist the Secretary-General in similar situations had previously been made known to him, it was possible, on 18 March 1992, to appoint the following two experts:

Dr. Sven-Ake Persson
Professor of Toxicology, Research Director
National Defence Research Establishment
Sweden

Mr. Heiner Staub
Chemical Engineer
NC-Laboratory Defence Technology and Procurement Agency
Switzerland

4. The third expert was appointed on 24 March 1992, namely:

Dr. J. P. Thompson
Head of Human Studies
Chemical and Biological Defence Establishment
United Kingdom of Great Britain and Northern Ireland

5. In the meantime, in a letter of 13 March 1992 addressed to the Secretary-General, the Permanent Representative of Mozambique reiterated his Government's strong wish to have a United Nations investigation team in Maputo at the Secretary-General's earliest convenience.

6. The work of the mission was coordinated by Mr. Johan Nordenfelt, Director, Office for Disarmament Affairs of the Department for Political Affairs, who facilitated its organization and ensured liaison with the competent authorities. He was assisted by Mr. Shigeru Mochida, Political Affairs Officer of the same Department.

7. Four members of the mission arrived in Maputo on 23 March 1992 and were joined on 24 March 1992 by its fifth member. In the course of their investigations members of the mission were able to go to the location identified by the authorities of Mozambique as the site of the incident, at which a chemical weapon is alleged to have been used, and to collect various types of samples. The mission concluded its investigations in Mozambique on 27 March 1992 and the qualified experts submitted a joint report to the Secretary-General on 1 April 1992. The samples have since been analysed independently at laboratories in Sweden, Switzerland and the United Kingdom.

8. The Secretary-General wishes to express his appreciation to the Governments of Sweden, Switzerland and the United Kingdom for making available the services of these eminent experts and the facilities of their laboratories to carry out the independent sample analyses. The results appear as appendices III to V to the experts' report (see annex).

* * *

9. In transmitting the report of qualified experts (see annex) to the Security Council, the Secretary-General notes that the experts determined that the Mozambican government forces sustained casualties not entirely explicable by the kind of weapons so far in use in the conflict in Mozambique. From the material available to the qualified experts it was not possible to determine whether or not a chemical weapon was used against Mozambican government forces. However, the mere possibility that chemical weapons may be used in the continuing armed conflict in Mozambique points to the urgency of finding a peaceful settlement. It is the Secretary-General's sincere hope that the

peace talks between the Mozambican Government and the Mozambican National Resistance (RENAMO) will lead to a satisfactory solution as soon as possible, to benefit not only the Mozambican population but also the stability of the Southern African region in general.

Annex

Report of experts dispatched by the Secretary-General to investigate allegation of the use of chemical weapons in Mozambique

CONTENTS

		Paragraphs	Page
Letter of transmittal			5
I.	METHODOLOGY	1 - 3	7
II.	THE INCIDENT	4 - 12	7
III.	MEDICAL ASPECTS	13 - 24	9
IV.	MUNITIONS ASPECTS	25 - 27	10
V.	SITE VISIT	28 - 31	11
VI.	DISCUSSION	32 - 33	11
VII.	CONCLUSIONS	34 - 37	11

Appendices

I.	Chronology of activities	12
II.	Map of southern Mozambique	14
III.	Analysis of alleged chemical weapon samples from Mozambique, National Defence Research Institute, Sweden	15
IV.	Off-site analysis of samples acquired during United Nations Mission to Mozambique, NC-Laboratory Spiez, Switzerland	19
V.	Analysis of samples from Mozambique by the chemical and Biological Defence Establishment, Porton Down, United Kingdom	21

LETTER OF TRANSMITTAL

Geneva, 1 April 1992

Sir,

We have the honour to submit herewith our report on the investigation you requested us to undertake concerning the alleged use of a chemical weapon in Mozambique.

In order to undertake the investigation, we visited Mozambique from 23 to 27 March 1992 (24-27 March 1992 for Dr. Thompson) for the purpose of carrying out the collection and examination of evidence as well as for interviews with those affected by the alleged use of chemical weapons and medical personnel who had been involved in treating and/or examining them. Although we were appointed in our individual capacities, we agreed to work as a team and our conclusions were reached unanimously.

Prior to the current investigation, both Dr. Persson and Dr. Thompson had conducted separate investigations at the request of the Government of Mozambique and have presented their reports to it. These reports were made available to the United Nations team by the Mozambican Government. An official report of the Government of Mozambique was also made available to the team. In addition, through the Office of the Trade Representative of South Africa, the United Nations team was able to obtain briefings by a South African doctor who had also conducted an investigation into the matter. His report was later made available to the United Nations team during its stay in Geneva. Although the present report was elaborated by the United Nations team on the basis of its own investigations, the aforementioned reports none the less served as valuable background material, together with the prior experience that two of the three experts on the United Nations team had gained.

In undertaking the present mission, we received support from many organizations and individuals. In particular, we would like to record our thanks to the Government of Mozambique for the cooperation and assistance provided by its various agencies throughout our mission.

We also wish to express our appreciation for the assistance we received from the United Nations Secretariat, particularly from Mr. Johan Nordenfelt and Mr. Shigeru Mochida of the Department of Political Affairs.

Our special thanks are due to the laboratories in Switzerland, Sweden and the United Kingdom currently assisting us by undertaking on our behalf analyses of samples collected at the location identified by the authorities of Mozambique as the site of the incident at which a chemical weapon is alleged to have been used.

We wish, Mr. Secretary-General, to express our gratitude to you for the confidence you have placed in us.

Yours sincerely,

Dr. S.-A. Persson
Mr. H. Staub
Dr. J. P. Thompson

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I. METHODOLOGY

1. In order to carry out our task, we adopted as required the following approaches:

(a) Interviews with government officials in Maputo in order to obtain information regarding the alleged use of chemical weapon(s);

(b) Visit to the war zone in the Ngungue region in order to obtain evidence regarding the alleged attack and to collect samples for chemical analysis in specialized laboratories;

(c) Interviews conducted with a number of patients who were allegedly exposed to an attack using chemical warfare agent(s) and with physicians who had treated them;

(d) A review of information concerning the incident obtained by two of the experts on previous visits to Mozambique;

(e) A review of information provided by a South African doctor who had conducted an investigation into the incident.

2. The team conducted its investigation in Mozambique from 23 to 27 March 1992. It then proceeded to Geneva to discuss evidence obtained and to produce a report to the Secretary-General.

3. The team must point out that a considerable delay occurred between the alleged incident and the investigation.

II. THE INCIDENT

4. The following account of the circumstances surrounding the incident of 16 January 1992 is based on the generally consistent testimonies of the soldiers who were present at that incident. Where testimonies contradicted each other on significant points, these points are indicated.

5. The Third Battalion of Commandos of the Mozambican government forces, reinforced with one company of provincial troops, left to attack a RENAMO base close to the South African border. The Third Battalion consisted of three companies and the total number of troops involved was approximately 300 to 400.

6. They initially travelled by vehicle, but on 14 January 1992 they left the vehicle near Corrumane. They continued on foot as a column of troops and set up a small camp for the night. On 15 January, they continued on foot in the same formation, moving north. A cyclist carrying a weapon was sighted. When alerted, he ran off. Having seen traces of RENAMO troops in the area, they changed into a box formation with one company forming each side of the box. They continued until they were a few kilometres south of the RENAMO base. As

it was getting late, they decided not to attack that day, but to set up camp for the night and attack the next morning. A reconnaissance group was sent out. They returned, confirming the location of the base and the position of the South African border. During the night, sounds of domestic animals were heard.

7. At daybreak on 16 January, they moved off in box formation towards the RENAMO base. As they approached the camp a white jeep-type vehicle was seen in the vicinity of the camp. Some troops reported seeing it on the South African side of the border. Others reported seeing it crossing the border into Mozambique. At about this time, a light aircraft was seen flying along the border.

8. The troops passed into the recently deserted RENAMO base, still in box formation. No resistance was encountered and the troops continued through the base without destroying it. They left the base. Several kilometres from the base they came under limited small-arms fire (no more than 15 shots) from a hill in the direction from which they had come. They took cover and there was an explosion overhead within the outline of the box. There is little doubt that the troops were in a box formation. However, there were some inconsistencies as to exactly which company was on which side of the box at the time of the attack.

9. The explosion occurred in the air, producing dark smoke which then dissipated. The wind was blowing towards the rear of the formation. The weather was sunny and described as normal for the time of the year. A single bang was heard with no particular smell or prior warning. They had not seen a similar explosion before and it did not produce alarm in the troops. No instantaneous casualties were caused. They remained at the site of the explosion for several minutes and then moved off. After approximately 15 minutes, the first complaints occurred and there were problems keeping the soldiers moving onward. Some soldiers were unable to get up and some followed but could not keep up and either took their own route or remained on site. Control was lost. The main body, under the Commander, continued, probably south, but after a short distance was again forced to stop. It appears that they remained in that place until dusk.

10. The main body tried to move on once more. By now many were littered along the route and uncontrolled firing of rifles broke out from time to time, from those lying down and from those on the move. During the firing, which appears to have continued for several hours, at least two soldiers were killed. The force, over a period of time, in groups of various sizes with the more able assisting those in a bad state, returned over a period of several days. None of those interviewed can recall the return route in detail. Some troops reached a small lake before returning to the vehicles.

11. After the first troops reached the vehicles a small group of soldiers was sent back to look for missing personnel. Some troops returned directly to the barracks and others were admitted directly to Maputo Military Hospital. Some troops deteriorated having returned to the barracks and were subsequently

admitted to hospital. The casualties were admitted over the period from 18 to 27 January 1992.

12. The following information was supplied by the Mozambican authorities:

Total number of Mozambican troops involved	382
Reported dead and transported to Maputo	4
Wounded during uncontrolled shooting	2
Admitted to Maputo Military Hospital	28
Missing	38

III. MEDICAL ASPECTS

13. The earliest symptoms following the attack included a feeling of tremendous heat within minutes of the attack, a severe thirst, dry mouth and sore throat. The air felt hot to breathe and chest pains were reported. Some casualties tore off their clothes and poured water over themselves. In severe cases, casualties dug scrapes in the ground to avoid the heat. Some casualties reported that sweating stopped following the attack.

14. In severe cases, profound muscular weakness occurred within one hour of the attack. In others, the onset of weakness was delayed for several hours. It was suffiently severe to prevent casualties from walking. In some casualties, lethargy occurred after several days and took several further days to reach its maximum. Some casualties left their weapons behind because they were too heavy to carry.

15. Visual disturbances were common and lasted several days. In particular, there were difficulties in focusing on distant objects. Some casualties reported narrow visual fields with objects appearing smaller than expected. The eyes did not water and were not particularly painful. Medical staff reported that casualties had dilated pupils on admission to hospital.

16. Confusion, disorientation, emotional lability and irrational behaviour occurred early in some casualties. Some muttered insults about their colleagues or made intimate, personal comments about their past life. Confused behaviour continued for several days. The more severely affected casualties seemed detached, passive and mentally slow during interviews.

17. After the explosion, some casualties had difficulty hearing and some complained of a ringing sensation in their ears.

18. The symptoms described above were reported by many of the casualties. Less common symptoms and signs included retching, vomiting, red urine, dysuria, urinary hesitancy and a blood-stained cough. Constipation was relatively common.

19. Skin lesions were not reported. There were no convulsions.

20. Early deaths, within one or two hours, were reported, as were casualties suddenly falling to the ground and dying, while trying to walk out of the area. On examination, medical staff reported that one casualty had had a haemorrhagic gastritis on gastroscopy. Examination of casualties by a member of the present United Nations team, two weeks after the attack, was generally unremarkable. Some casualties appeared passive and mentally slow. One casualty had sustained a stroke affecting his right side and had signs of a left lower lobe respiratory infection.

Discussion of symptoms

21. The symptoms and signs exhibited by the casualties are similar to those that could be caused by exposure to an atropine-like agent. Some of the symptoms could also be due to heat stress induced by dehydration.

22. Centrally acting atropine-like agents produce a variety of effects. Small doses cause diminished alertness, drowsiness, blurred vision, mydriasis, dry mouth and an increase in heart rate. Higher doses cause ataxia, delusions, hallucinations, random unpredictable behaviour and in inability to respond to the environment. Decreased salivation and bronchial secretions occur. Gastric stasis and constipation is found. Micturation may be inhibited.

23. Although these compounds are metabolized fairly rapidly, they bind strongly to muscarinic receptors and may therefore have a prolonged action.

24. Dehydration makes casualties susceptible to heat stress. Many of the symptoms mentioned above are also observed in casualties with severe heat stress. Weakness, lethargy and apathy may be found and casualties may feel nauseated. The mouth becomes dry and casualties may feel thirsty. The core temperature rises. In severe cases of heat stress, a stroke may occur.

IV. MUNITIONS ASPECTS

25. There was an explosion above the troops. Possible causes for this explosion include an exploding artillery or mortar shell, or a rocket self-destructing above the troops. A self-destructing rocket would not be expected to carry a chemical agent. Artillery and mortar shells can be either chemical or conventional.

26. To position a single explosion from a heavy artillery gun reliably over the troops would take considerable preparations and organization. A mortar could position an explosion more easily, but could carry a chemical fill of only a few kilograms of agent.

27. The use of a single artillery round or mortar shell is unusual in either conventional or chemical attack. More usually, a salvo of several rounds would be fired over a short period. No follow-up attack occurred after the single explosion, despite the considerable disorganization which resulted.

V. SITE VISIT

28. Two members of the team, accompanied by two members of a team from the United Kingdom, visited the area of the attack. The site was identified to them by two soldiers who said they had been present during the attack. The site visited was further south than anticipated. Its location was recorded as 24°53.55 S-32°02.80'E (World Geodetic Survey 1984) using the Global Positioning System, a device not available to the accompanying troops.

29. Transport to the site was by helicopter and armoured vehicle, with the last few hundred metres being completed on foot.

30. Soil and vegetation samples were taken from the area for subsequent analysis.

31. Owing to reports of enemy activity in the area at the time the samples were collected, only a limited time could be spent at the site.

VI. DISCUSSION

32. The signs and symptoms of the casualties are consistent with the use of an atropine-like chemical warfare agent, but are also consistent with severe heat stress. The use of an atropine-like agent does not remove the possibility of heat stress; rather, it increases an individual's susceptibility to it.

33. The previous description of possible munitions types shows that it is improbable that a chemical attack would be planned using a single round. However, it cannot be excluded that the limited quantity of agent that could be delivered would have had an effect which could have been exacerbated by local climatic conditions and limited water supply.

VII. CONCLUSIONS

34. An attack against Mozambique government forces is reported to have occurred on 16 January 1992 in the Ngungue region of Mozambique, close to the South African border.

35. The effect on the troops was consistent with the use of an atropine-like chemical warfare agent and also with severe heat stress.

36. In the current absence of analytical data, we cannot conclude that a chemical warfare agent was used in the attack.

37. A considerable delay occurred between the attack and the investigation being mounted. For this reason, it may not be possible to detect traces of agent if a chemical warfare agent had been used in the attack.

Appendix I

Chronology of activities

Sunday, 22 March 1992

Mission assembles in Lisbon (except Dr. Thompson)

Monday, 23 March 1992

Departure from Lisbon

Arrival in Maputo, Mozambique

Tuesday, 24 March 1992

Meeting and briefing in Ministry of Foreign Affairs

Meeting with the Commander of the Armed Forces at the headquarters, Army General Staff

Visit to the Military Hospital and a meeting with its Clinical Director

Dr. Thompson joins the mission

Wednesday, 25 March 1992

Meeting with the Vice-Minister of Health

Interviews with patients in the Military Hospital

Thursday, 26 March 1992

Examination of, and interviews with, patients in the Military Hospital

Meeting with the South African Trade Representative

Meeting with the Vice-Minister of Health

Friday, 27 March 1992

Visit to the site of incident in the Ngungue region

Briefing by a South African doctor

Meeting with the Foreign Minister of Mozambique

Departure from Maputo

Saturday, 28 March 1992

Arrival in Geneva

Sunday 29 March 1992

Preparation of report by experts

Monday, 30 March 1992

Preparation of report by experts

Tuesday, 31 March 1992

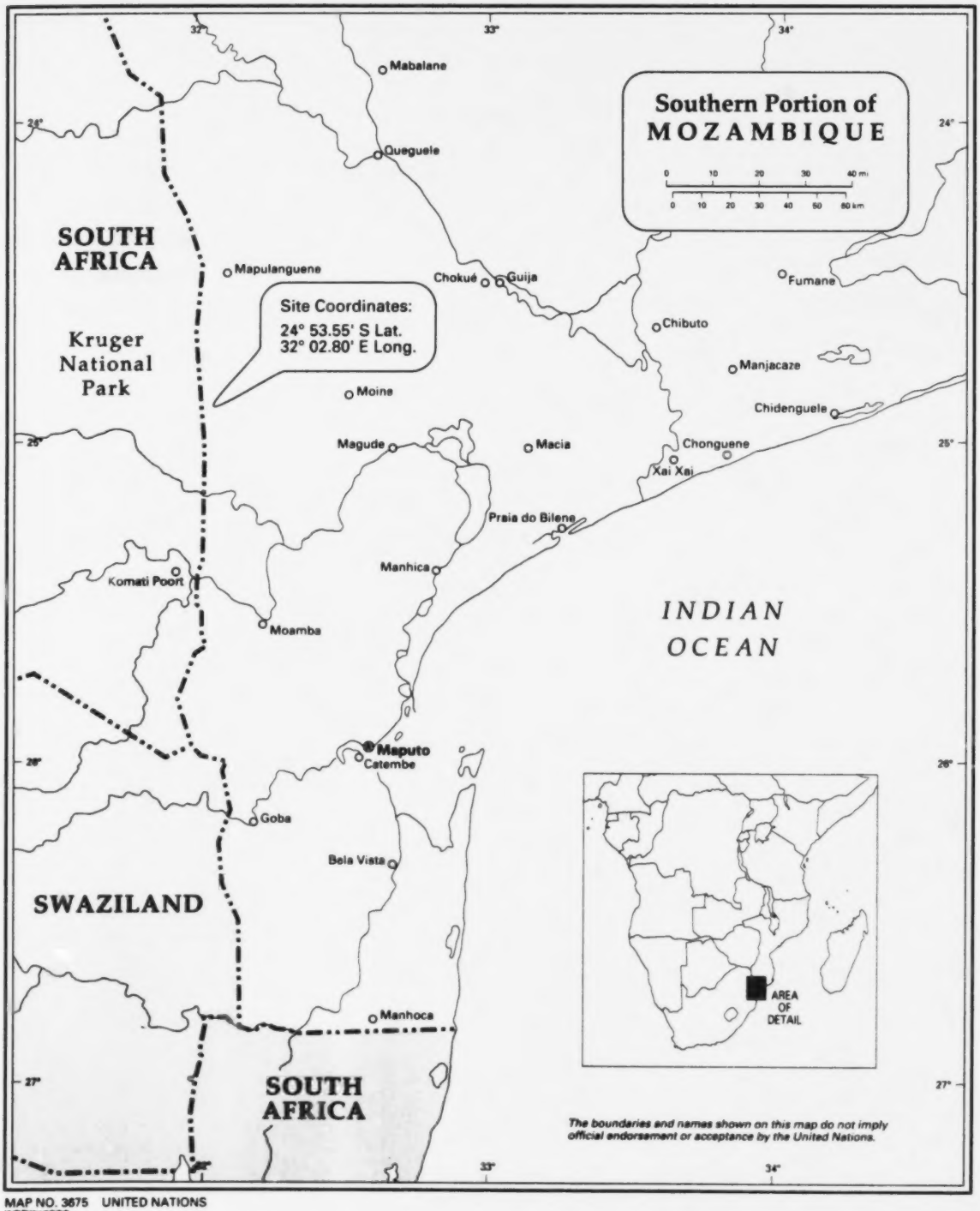
Finalization of report by experts

Wednesday, 1 April 1992

Mission disperses from Geneva

Appendix II

Map of southern Mozambique



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Appendix III

Analysis of alleged chemical weapon samples from Mozambique

FOA ABC-SKYDD
National Defence Research Institute
Department of NBC Defence
Division of Chemistry*

28 April 1992

Sample description

The samples were received at FOA on 1 April 1992. They were stored in a refrigerator at +6°C before work-up and analysis.

In addition two samples of combat clothing, reported to be from the cadavers of Eusebio Carlos and Joao Fabiao Cossa, together with two control samples were received on 11 March 1992.

The type of samples received together with their code numbers are listed in table 1.

Sample preparation

About half of each sample was used for extraction. The samples were extracted with methanol/water (3:1) for 5 minutes in an ultrasonic bath. The vegetation samples were cut into small pieces before extraction.

The extracts from soil samples were recovered after centrifugation for 5 minutes at 2,000 rpm. All extracts were evaporated to dryness in a rotatory evaporator and the residue was dissolved in 0.5 ml acetone for analysis.

Analytical methods

All extracts were screened with GC-NPD with BZ as a reference. The samples which gave a signal at approximately the same retention time as BZ were also analysed by GC-MS.

The combat clothing samples were also analysed for the presence of zinc and phosphorous. The amount of zinc was determined with atomic adsorption spectroscopy and phosphorous was determined by a spectrophotometric method.

Instrumental conditions

Gas chromatography: An HP 5880 equipped with an NPD was used. The column was a 10 m x 0.2 mm HP-1 0.30 µm. The samples were injected at 50°C and the column temperature programmed after a 1 minute initial period at

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* Headed by Dr. Gustav Andersson.

20°C/min. to 220°C and then 10°C/min. to 280°C with 2 minutes at the final temperature. Helium was used as the carrier gas at 30 cm/s. Injector temperature 220°C and detector temperature 280°C.

Gas chromatography/mass spectrometry: An HP 5890 interfaced to a Trio-1 was used. The column was a 28 m x 0.25 mm JW DB-1. The same temperature program as for GC-NPD was used. Electron ionization (70 eV) was used. Source temperature was 280°C, trap current was 250 μA. The scan range was 40-500 amu.

Results

No BZ was found in the samples. The detection limit (GC-NPD) was between 0.08-0.3 μg/g sample, depending on samples amount extracted.

The amount of zinc and phosphorous found in the combat clothing samples is low and does not differ significantly from the amount found in the controls (see table 2).

Dr. Sven-Ake PERSSON
National Defence Research Institute
Division of Chemistry

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Table 1. *Samples listed by code number and sample type*

Sample	Type
049(B)	Military material
050(A)	Soil
050(B)	Soil
051(A)	Military material
051(B)	Military material
052(A)	Soil
052(B)	Soil
053(A)	Vegetation
053(B)	Vegetation
054(A)	Vegetation
054(B)	Soil
055(A)	Soil
056(A)	Soil
056(B)	Soil
057(A)	Soil
057(B)	Soil
058(A)	Soil
058(B)	Vegetation
059(B)	Soil
062(A)	Soil
063(B)	Soil
1. Eusebio Carlos 94/92	combat clothing
100/92	combat clothing (control)
2. Joao Fabiao Cossa 92/92	combat clothing
100/92	combat clothing (control)

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Table 2. Results of analyses for zinc and phosphorous in combat clothing

Sample	Zinc mg/kg	Phosphorous %
1. Eusebio Carlos 94/92	75	0.02
100/92 control	16	<0.01
2. Joao Fabiao Cossa 92/92	31	0.02
100/92 control	8.5	<0.01

Appendix IV

Off-site analysis of samples acquired during United Nations mission to Mozambique (23-27 March 1992)

NC-Laboratory Spiez 6 May 1992

Abstract

We received 22 samples which were analysed. Fifteen of them were soil samples, 4 were vegetation, 2 were slings from rifles and 1 was a wooden rifle furniture. All samples were analysed on the presence of BZ and typical degradation products by means of GC/MS. The detection limit for these compounds was approximately 0.1-0.5 ppm. Above these limits, none of the suspected substances could be detected in any of the samples.

Analysis of the various samples

General

The samples were received on 1 April 1992. They arrived in good condition without any sign of transport damage. They were stored in a freezer at 4°C.

Instrumentation

The analytical instrumentation consisted of a Hewlett-Packard 5890 II gaschromatograph coupled with a Hewlett-Packard 5971 mass selective detector. Capillary column GC/MS analyses were also performed with a Hewlett-Packard 5988A system.

Soil samples: 052(A), 052(B), 054(B), 055(A), 056(A), 056(B), 057(A), 057(B), 058(A), 059(B), 061(A)

050(A), 050(B), 062(A), 062(B) (control samples)

Characterization: Brown soil (15 - 50g)

Preparation: For each sample, 10g of soil were extracted with 10 ml of dichloromethane containing 1 per cent of triethylamine using sonication for 15 minutes. The extract was filtered through a membrane filter.

Analytical: The extracts were analysed specifically on the presence of BZ and typical degradation products (benzophenone, quinuclidin-3-ol) by means of GC/MS using selected ion monitoring conditions (m/z 105, 127, 182, 183, 337). GC/MS measurements in scan mode were performed over the mass range m/z 40-500.

Result: BZ and the typical degradation products could not be detected in any of the samples.

Samples of vegetation: 053(A), 053(B), 054(A), 058(B)

Characterization: Green or brownish-green leaves of different trees or shrubs, (2-3g).

Preparation: 1 to 1.5g of the samples were extracted with 5 ml of dichloromethane containing 1 per cent of triethylamine using sonication for 15 minutes. The extract was filtered through a membrane filter.

Analytical: Same analytical procedure as described for soil samples.

Result: BZ and the typical degradation products could not be detected in any of the samples.

Samples from rifles: 049(B), 051(A), slings from rifles
051(B), wooden rifle furniture

Characterization: Pieces of greyish-brown rifle slings (approx. 10g); piece of wooden stock (28g).

Preparation: 5g of each belt were extracted with 15 ml of dichloromethane containing 1 per cent of triethylamine using sonication for 15 minutes. The entire piece of wooden stock was extracted in the same way with 30 ml of solvent. The extracts were filtered through a membrane filter.

Analytical: Same analytical procedure as described for soil samples.

Result: BZ and the typical degradation products could not be detected in any of the samples.

Analytical details are available on request.

(Signed) Dr. A. NIEDERHAUSER
NC-Laboratory Spiez

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Appendix V

Analysis of samples from Mozambique by the Chemical and Biological Defence Establishment, Porton Down, United Kingdom

29 April 1992

Summary*

1. The United Kingdom was invited by Mozambique to send a team to carry out sampling at the site in the course of a United Nations investigation team visit to Mozambique from 24 to 27 March 1992. The present appendix describes the sampling procedures used and the analytical results obtained.

2. The 21 samples obtained were taken during a one-and-a-half-hour visit to the alleged site of the incident and consisted of 14 soil samples, 4 vegetation samples, 2 samples of military webbing and 1 sample of rifle stock. The samples were returned to the Chemical and Biological Defence Establishment, Porton Down, on Saturday, 28 March 1992, for sample division for analysis by the United Kingdom, Sweden and Switzerland.

3. The samples were screened for low levels (10^{-9}g) of 20 chemical weapon agents by gas chromatography/mass spectrometry (GC/MS) following three extraction procedures. The samples were also analysed by a more sensitive screen to detect trace levels (10^{-10}g) of three anticholinergic agents.

4. The 21 samples analysed by the GC/MS screening procedure did not contain the following chemical weapon agents: the nerve agents GA, FGA, GB, GD, GF, MeGF, VX and DFP; the vesicants H, HN1, HN2, HN3, T and PS; the irritants CS, CR, CN, BBC and KSK; the psychochemicals BZ and cyclopentyl-BZ at a detection level of 20-50 nanograms (2×10^{-8} to 5×10^{-8}g).

5. A more detailed analysis of the samples using the selective ion mode (SIM) confirmed that the 21 samples did not contain the anticholinergic compounds BZ or cyclopentyl-BZ or the volatile breakdown product of either BZ and cyclopentyl-BZ (quinuclidinol) or atropine (tropine) at a detection level of 200 picograms (2×10^{-10}g).

6. The soil and military webbing samples analysed contained various hydrocarbons, long-chain aldehydes and alcohols and methyl esters of fatty acids. The samples of vegetation and rifle furniture contained a large number of high molecular weight compounds, many of which were natural products.

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* The complete report is available upon request from the Office for Disarmament Affairs.

7. Although no trace was identified of any of the 20 chemical weapon agents screened, an insecticide was detected in a control soil sample taken in the gardens of the British Embassy in Maputo, the capital of Mozambique. This demonstrated that the analytical techniques used would have been capable of identifying any unusual material extracted from environmental samples or military matériel.

Dr. Graham S. PEARSON
Chemical and Biological
Defence Establishment